

US Application No. 09/426,111

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Q1 of any shape although the remainder of the package of the present invention may need to be adapted accordingly. A typical array may contain at least ten features 16, or at least 100 features, at least 10,000 features, or more. All of the features 16 may be different, or some or all could be the same. Each feature carries a predetermined moiety or mixture of moieties which in the case of FIGS. 1-3 is a polynucleotide having a particular sequence. This is illustrated schematically in FIG. 3 where regions 16 are shown as carrying different polynucleotide sequences. Arrays of FIGS. 1-3 can be manufactured by in situ or deposition methods as discussed above.

Paragraph at page 9, line 23 to page 10, line 6

Q2 After the reaction with array 12 is deemed to be sufficiently complete, a hollow needle in communication with a source of suitable wash fluid (such as an aqueous buffer solution) can be inserted through septa 43 of first port 42, while another hollow needle is inserted through septa 52 of second port 50 to allow for venting. The wash fluid is then forced from first port 42 through cavity 38 under sufficient pressure that the previously established seals in channels 46 and 56 are broken (that is, the pressure is greater than the minimal pressure for all the channels). Thus, the wash fluid so added through first port 42 will be directed by the first set of channels 46 from first port 42 toward multiple different regions across first side 11a of substrate 10. Note that if positive valves such as provided by nucleating resistors 74 are present in first set of channels 46, they can be selectively activated (that is opened and closed) either continuously and/or in some sequence, to control the flow of wash fluid to different areas of array 12, so as to enhance coverage of the wash process. The first fluid (and, depending on how long it is desired to continue the operation, wash fluid also) will be vented from chamber 36 through the second set of channels 56 and out second port 50 (and the hollow needle inserted through septum 52). Optionally, septa 43, 52 can be removed at this point, to increase fluid flow.

Claims: